

Amendments to the Claims

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (Currently Amended) A substrate processing method that ~~exposes to an atmosphere including hydrogen radicals and hydrogen ions a~~ applies a hydrogen sintering process to an electronic device substrate ~~for an electronic device on which substrate a semiconductor device is already formed, the~~ substrate processing method comprising the steps of:

~~wherein the hydrogen radicals and the hydrogen ions are formed~~ forming an atmosphere comprising hydrogen radicals and hydrogen ions by exciting a processing gas including a noble gas and hydrogen ~~[[by]]~~ into a plasma, and
applying the hydrogen sintering process to the electronic device substrate by exposing the electronic device substrate to the hydrogen radicals and the hydrogen ions.

2. (Currently Amended) The ~~substrate processing method as claimed in claim 1, wherein the atmosphere including the hydrogen radicals and the hydrogen ions includes heavy hydrogen radicals and heavy hydrogen ions is~~ selected from the group consisting of hydrogen gas, heavy hydrogen gas, and mixtures thereof.

3. (Currently Amended) The ~~substrate processing~~ method as claimed in claim 1, wherein the plasma is formed by microwaves.

4. (Currently Amended) The ~~substrate processing~~ method as claimed in claim 1, wherein the plasma is formed by emitting microwaves from a planar antenna.

5. (Currently Amended) The ~~substrate processing~~ method as claimed in claim 1, wherein the semiconductor device includes a MOSFET and a DRAM.

6. (Currently Amended) The ~~substrate processing~~ method as claimed in claim 1, wherein the substrate for the electronic device is one of a Si substrate, a SiGe substrate, and a glass substrate.

7. (Currently Amended) The ~~substrate processing~~ method as claimed in claim 5, wherein the MOSFET or DRAM includes one of a thermal oxide film and a thermal nitride film as a gate insulation film.

8. (Currently Amended) The ~~substrate processing~~ method as claimed in claim 5, wherein a gate insulation film of the MOSFET ~~includes a gate insulation film~~ is formed by one of plasma oxidation, plasma nitriding, catalytic oxidation, catalytic nitriding, CVD, and PVD.

9. (Currently Amended) The ~~substrate processing~~ method as claimed in claim 1, wherein the semiconductor device includes a storage element using a high dielectric insulation film as an interelectrode insulation film.

10. (New) The method as claimed in claim 1, wherein the hydrogen radicals and the hydrogen ions are formed at a pressure of 13.3 to 267 Pa.

11. (New) A method of fabricating a semiconductor device including a step of hydrogen sintering wherein an electronic device substrate is exposed to a plasma containing hydrogen, said method comprising the steps of:

forming a gate insulation film on said substrate;
forming an electrode of polysilicon on said gate insulation film; and
exposing said polysilicon electrode to an atmosphere containing hydrogen radicals and hydrogen ions, said hydrogen radicals and said hydrogen ions being formed by exciting a gas containing a noble gas and a hydrogen gas by plasma.

12. (New) The method as claimed in claim 11, wherein the atmosphere including the hydrogen radicals and the hydrogen ions is selected from the group consisting of a hydrogen gas, a heavy hydrogen gas, and mixtures thereof.

13. (New) The method as claimed in claim 11, wherein the plasma is formed by microwaves.

14. (New) The method as claimed in claim 11, wherein the plasma is formed by emitting microwaves from a planar antenna.

15. (New) The method as claimed in claim 11, wherein the semiconductor device includes a MOSFET and a DRAM.

16. (New) The method as claimed in claim 11, wherein the substrate for the electronic device is one of a Si substrate, a SiGe substrate, and a glass substrate.

17. (New) The method as claimed in claim 15, wherein the MOSFET or DRAM includes one of a thermal oxide film and a thermal nitride film as a gate insulation film.

18. (New) The method as claimed in claim 15, wherein a gate insulation film of the MOSFET is formed by one of plasma oxidation, plasma nitriding, catalytic oxidation, catalytic nitriding, CVD, and PVD.

19. (New) The method as claimed in claim 11, wherein the semiconductor device includes a storage element using a high dielectric insulation film as an interelectrode insulation film.

20. (New) The method as claimed in claim 11, wherein the hydrogen radical and the hydrogen ions are formed at a pressure of 13.3 to 267 Pa.